

REMARKS

The foregoing Amendment and following remarks are responsive to the Office Action mailed May 8, 2006 for the above-referenced patent application.

Pending Claims

Claims 1, 2, 8-12, 18-20, 22, 23 and 29-31 are pending. Claims 7, 17, 21, 28 and 32 have been cancelled by the present Amendment. Independent claims 1, 11 and 22 have been amended.

Drawings

In the Office Action, the drawings were objected as not showing every feature of the claimed invention. Applicants have cancelled claims 7, 17, 28, 21, and 32 thereby rendering this objection moot.

35 USC §112 Rejections

In the Office Action, claims 7, 17 and 28 were rejected under 35 U.S.C. §112, first paragraph. Furthermore, claims 21 and 32 were rejected under 35 U.S.C. §112, second paragraph. As previously mentioned, Applicants have cancelled claims 7, 17, 21, 28 and 32 thereby rendering these rejections moot.

35 USC §102 Rejections

In the Office Action, claims 1-2, 8-12, 18-20, 22-23, 28-31 were rejected under 35 U.S.C. § 102(b) as being anticipated by Boutaghou (U.S. Pat. No. 6,069,771). Applicants respectfully submit that independent claims 1, 11 and 22 are not anticipated

by Boutaghou because the referenced does not disclose that the moveable structure can move in both the pitch and roll directions with respect to the stationary structure with the microactuator.

As understood, Boutaghou discloses a micro-actuator device wherein the gimbal assembly is only moveable in one plane. Specifically, referring to Figures 3A and 3B of Boutaghou, a linear motor 58 expands in the X and/or Y directions to linearly displace gimbal 53 in small increments for fine positioning of the slider 54. In this respect, the gimbal 53 is only moveable by the microactuator (i.e., linear motor 58) in the x-y plane direction. (See Figure 3A). There is no description in Boutaghou that the gimbal 53 is positioned by the microactuator in the pitch and roll directions. Similarly, Figures 4A and 4B disclose a motor for fine positioning a gimbal 73 and slider 74 about axis 81. In this respect, the gimbal 73 is positioned by the microactuator in an arc around axis 81. Accordingly, the Boutaghou reference does not disclose the microactuator positioning the gimbal in the pitch and roll directions. In fact, the Boutaghou reference teaches only moving the gimbal in a single plane because it uses existing micromotor designs that simplify design. (Boutaghou, col. 4, lines 2-6).

On the other hand, the invention as described by independent claims 1, 11 and 22 is not anticipated by Boutaghou because the gimbal moves in both the pitch and roll directions by the microactuator. As seen in Figure 6 of the present application, the microactuator structure 607 moves the slider 609. Figure 7 illustrates that the slider mounted to slider bonding plate 703 is moveable in pitch and roll directions illustrated by arrows 705. Referring to Figure 8, rotational movement of the gimbal structure is accomplished by applying force 802 to slider bonding plate 803 with the microactuator (not shown). Figure 9 shows that pitch attitude control is achieved by applying forces

902 and 903 with the microactuator (not shown). Accordingly, it is possible with the microactuator to control both the pitch and roll of the gimbal assembly.

Applicants respectfully submit that Boutaghou does not disclose pitch and roll control of the gimbal with the microactuator because Boutaghou is only concerned with positioning the slider in a translational direction. Accordingly, Boutaghou discloses movement about one axis (Figures 4A and 4B), or in a single x-y plane (Figures 3A and 3B). As such, Boutaghou does not disclose the invention as described by amended claims 1, 11 and 22. Applicants respectfully submit that independent claims 2, 8-10, 12, 18-20, 23 and 29-31 are in condition for allowance as being dependent upon an allowable base claim.

35 USC §103 Rejections

In the Office Action, claims 21 and 32 were rejected under 35 U.S.C. §103(a) as being rendered obvious in view of the combination of Boutaghou and Ichikawa (U.S. Pat. No. 6,621,661). However, Applicants have cancelled claims 21 and 32 thereby rendering this rejection moot.

Conclusion


In view of the foregoing Amendment and remarks, Applicants respectfully submit that claims 1, 2, 8-12, 18-20, 22, 23 and 29-31 are in condition for allowance.

Specifically, the claims are not anticipated by Boutaghou because the reference does not teach or suggest the gimbal structure allowing pitch and roll motion of the moveable structure with the microactuator structure. Applicants respectfully request that a Notice of Allowance be issued in relation to the pending claims of the application.

Should the Examiner feel that a telephone conference would advance prosecution of the present application, the Examiner is invited to call the undersigned attorney at the number listed below.

Respectfully submitted,

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